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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/484,223	01/18/2000	Toshitaka Agano	q55890	9431

7590

08/13/2003

Sughrue Mion Zinn Macpeak & Seas PLLC
2100 Pennsylvania Avenue N W
Washington, DC 20037-3202

EXAMINER

AKKAPEDDI, PRASAD R

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/484,223

Applicant(s)

AGANO ET AL.

Examiner

Prasad R Akkapeddi

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 26-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-15, 17-20, 24 and 26-31 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 16 and 21-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Prosecution Application

1. The request filed on 05/28/2003 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/484,223 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 16, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (Watanabe) (U.S. Patent No. 6,172,814) in view of Valliath et al. (Valliath) (U.S. Patent No. 5,629,785).

As to claims 1-2, 16 and 21-23: Watanabe discloses a light diffusion plate for diffusing the light from a liquid crystal display type of device (Col 1, lines 12-16) that could be used to diffuse back light or as a front viewing angle-increasing plate. In Fig. 8 and in (Col 7, lines 60-67) discloses a transparent base member having refractive index 11 (Col 4, line 50), a transparent -ball (spheres) layer 12, either in contact or in close contact with one another, a color layer 13 used for light exposure, an anti-reflection layer 28 (preventing sheet) and in (Col 8, lines 7-10) discloses light transmitting (passing) and light absorbing layer 105 (non-

passing) in Fig. 40. Watanabe discloses that the above plate, with all the features recited earlier and as shown in Figs. 8 and 40, could be used as the front diffusing plate for liquid crystal display device to enhance the viewing angle (Col 1, lines 11-14), thus disclosing a liquid crystal device that incorporates the diffusing plate, as recited in instant claims 16, 21-23. Watanabe discloses that the diffusing plate (10S) is disposed on a viewing side of the display (Fig. 8). Watanabe also discloses anti-reflection layers (28) that prevents extraneous light from being scattered and are provided on the light diffusing plate which is provided on the viewing side of the display screen.

While disclosing passing areas that correspond to the light transmitting spheres and are separated by low-passing areas (Fig. 8), Watanabe, however, does not disclose 'portions of the passing areas and a portion of the low-passing area are disposed past the spheres in a passing direction of the collimated light'. Valliath on the other hand, in disclosing a similar liquid crystal display device with a diffuser discloses that the glass microspheres (30) are disposed in a light absorbing matrix (i.e., binder, 32) (Fig. 2) thus simultaneously forming passing areas and low passing areas and portions of the passing areas and the low passing areas are disposed past the spheres in a passing direction of the light (Fig. 2).

With respect to the newly recited features in claims 1, 16 and 21: Watanabe discloses a binder (13) (col. 10, lines 1-4), adhered to at least a circumferential portion of the spheres (12) and the circumferential portion is part

of a half of the spheres (12) which faces the plane, as can clearly be seen in Figs. 8-12. The passing areas (12) and low-passing areas (13, since it is colored, some light will pass through these areas and hence become low-passing areas), are provided in a plane as can be seen in Figs. 8-12. Since Watanabe layer (13) is a colored layer and binds the spheres (col. 10, lines 1-4), it does absorb light and hence satisfies the limitation claimed in claim 2. Watanabe discloses a light transmitting support (15) (col.9, lines 64-67) as recited in claim 22.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the specific structure of the diffuser as disclosed by Valliath to the device disclosed by Watanabe to enhance contrast in the display.

Allowable Subject Matter

4. Claims 3-15,17-20, 24 and 26-31 are allowed.
5. The following is an examiner's statement of reasons for allowance:

A search of the prior art did not disclose either a light diffusing plate or a display apparatus with the above light diffusing plate, comprising a combination of structural elements, more specifically:

(a) A light sensitive thermal developable material layer which is formed between the light transmitting support and the diffusion layer that contains a light-sensitive thermal developable material which has colorless areas and colored areas formed by being heated after nearly collimated light is incident from the diffusing layer side, as recited in claims 3 and 17.

(b) A thermal ablative layer between the light transmitting support and the diffusing layer that contains a light absorptive thermal ablative material, which has intermittent areas where the thermal ablative material has been removed and are separated by non-removed areas, as recited in claims 4 and 18.

(c) The contacting material contains a light-sensitive material which has a colorless exposed areas and a light absorptive material and the light-sensitive material also has colored areas formed from being heated and developed after nearly collimated light is incident from a side of the diffusing layer, as recited in claims 5, 19 and 20.

(d) A light sensitive material which has colorless exposed areas and is provided between the contacting material and the light transmitting support, as recited in claim 6.

(e) A layer of material having intermittent areas where light transmissivity is greater than other areas in the layer and the layer disposed passed the spheres in a passing direction of the collimated light, as recited in claim 24.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 703-305-4767. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

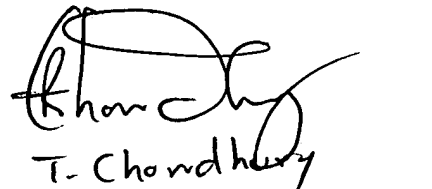
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0530.



July 22, 2003



T. Chondhury
Primary Examiner